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MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

| EXAMINER | |
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| LIGHTFOOT, ELENA TSOY | |
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## *Advisory Action*

The Amendment to the Specification filed on October 15, 2010 under 37 CFR 1.116 in reply to the final rejection has been entered as correcting minor errors in the Abstract. The Request for Reconsideration filed on October 15, 2010 has been considered but is not deemed to place the application in condition for allowance for the reasons of record set forth in the Final Office Action mailed on June 15, 2010.

## *Abstract*

A substitute Abstract filed on October 15, 2010 has been entered.

## *Response to Arguments*

Applicant's arguments filed October 15, 2010 have been fully considered but they are not persuasive.

**Rejection Under 35 U.S.C. 103**

**Pause**

Applicants traverse this rejection. It is noted that claim 24 is now included in this rejection. There are additional reasons for patentability of method claims 24-29, which are discussed first herein. As will be recalled, Pause discloses silicone rubber materials containing finely divided phase change materials, and a process for their production. See column 1, lines 18-21. Pause discloses a method for thermal insulation of cables or thermal protection of technical products employing this silicone rubber matrix containing the finely divided phase change materials, emulsified or dispersed in a cross-linked silicone rubber structure. See column 3, lines 16-28. This disclosure does not suggest the methods of claims 24-29. At page 4 of the Final Rejection, it is again apparently argued that the preamble recitation of insulating a flowline or pipeline is not given patentable weight. It is again emphasized that the pipeline is not just a preamble recitation, as in the body of claim 24 there is further recitation that the insulating liquid base and gelling agent are positioned "on a surface of the flow line or pipeline to be insulated," thus requiring the presence of the flowline or pipeline. However, it is argued at page 5 of the office action that Pause disclosure of "thermal insulation of cables or thermal protection against technical products" (emphasis added), at col. 3, lines 26-28, does not limit the scope of "technical products" and thus reads on protecting any

products known to need thermal insulation coverage. It is respectfully submitted that this is far from how one of ordinary skill in the art would interpret "technical products." Indeed, if any "technical product" needing insulation were encompassed by this recitation in Pause, regardless of the entirety of the disclosure and what patentees actually teach, then the material could be used for insulating rocket engines, inside of winter coats, inside of double pane windows, electronic components, and any other uses despite varying widely diverse factors being imposed upon the thermal insulating material. Clearly, this is not only not patentees' intent, but not how the term would be taken by one of ordinary skill in the art. Instead, since "technical products" has no intrinsic meaning, one of ordinary skill would look to the specific class of products disclosed in the reference, and would see that the properties disclosed therein are "thermal performance" and "comfort sensation" (see the abstract) and "thermal performance characteristics and thermal comfort sensation" (see col. 1, lines 26-27). This "thermal comfort" is always associated with the thermal performance of items which are in human contact, i.e., car seats, bicycle saddles, diving suits, building materials or medical devices (see the abstract), sports garments, diving suits, protective garments, blinds, building materials, medical products, automotive products (col. 1, lines 29-31), building products, protective garments, medical devices, automotive products and sporting goods such as diving suits (col. 3, lines 27-30). In all of these products, the common thread is human perception of thermal comfort (even for building materials, as thermal insulation in buildings is an important factor in achieving thermal comfort for the occupants there within). Note also that, although Pause does disclose also "cable insulation," the patent makes a distinction between "cable insulation" and "thermal protection of technical products." This clearly shows that insulation and thermal protection do not address equivalent issues. Thermal protection of technical products thus would be taken by one of ordinary skill in the art to mean overheating of electric or electronic components such as batteries, etc. One of ordinary skill in the art would not, however, envision "technical products" to include pipelines or flowlines, since these utilities are wholly different than the thermal insulation of bicycle seats, or building materials, where human comfort rather than transmissive properties are of importance, and different from insulation of electronic products or cables where the desire is to prevent humans from exposure to heat generated by operation of the device. Simply because a material is effective in these uses does not suggest to one of ordinary skill that the material can be used in the highly different environment of pipelines. Thus, it is submitted that claims 24-29, which recite thermal insulation of pipelines, are simply not suggested by the use of a material to insulate, e.g., bicycle seats.

The Examiner respectfully disagrees with this argument. As was discussed in the Final Rejection mailed on 6/15/2010: “Pause does disclose a thermal insulation of cables or thermal protection of ***technical products*** (See column 3, lines 26-28). Note that Pause does not limit “***technical products***”. Therefore, it would be obvious to one of ordinary skill in the art to use the method of Pause for thermally protecting any

"***technical products***" known to have thermal insulation coverage including claimed flowlines and pipelines, especially considering the fact that it is conventional to protect power cables by placing them into pipelines and thermally insulate the pipelines, **as evidenced by Vergouw**." However, Applicants failed to mention herein **Vergouw**'s teaching of pipelines.

The Examiner maintains previous position: Pause discloses thermal insulation of cables or "thermal protection of technical products" by coating metal or plastic substrates (See column 4, lines 48-51), i.e. coating cables with a coating mixture and curing it in situ (See column 6, lines 52-54). Clearly, one of ordinary skill in the art would think of insulating other technical products that will need protection in similar range of temperatures and similar chemical environment. Therefore, one of ordinary skill in the art would think of insulating technical products **similar** to cables i.e. cable like technical products that need to be adequately protected in the same temperature range and chemical environment, e.g. flowlines and pipelines for at least the reason that cables are known to be placed into pipelines, **as evidenced by Vergouw** (See paragraph 9 of the Non-Final Office Action mailed on 2/01/2010 and paragraph 9 of the Final Office Action mailed on 6/15/2010). Moreover, claims 24-29 were *rejected* over Pause in view of Kilgour, further **in view of Vergouw** (See paragraph 9 of the last Final Office Action mailed on 6/15/2010). Vergouw was applied for teaching that power cables may be thermally insulated by placing the power cables into **pipeline** 4 that together with other pipelines 2 and 3 for e.g. oil or gas are placed into a carrier pipe 1 (claimed external jacket), lowering the carrier pipe to the seabed (See column 3, lines 60-63), filling the space around the lines 2-4 with an insulation composition by varying pressure (See column 4, lines 39-40), and gelling the composition (See FIGS. 1 and 2; column 2, lines 53-64; column 4, lines 3-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have thermally insulated electric cables of the cited prior art by placing them into a carrier pipe together with other pipelines to be insulated, lowering the carrier pipe to the seabed, filling the carrier pipe with an insulation composition by varying pressure, and gelling the composition, as taught by Vergouw.

**Pause taken with Kilgour**

With respect to the rejection of the listed claims (including claim 24) employing Pause taken with Kilgour, it is again respectfully submitted that Kilgour is directed to a nonanalagous art area. Kilgour discloses a silicone elastomer gel emulsion/composition usable in the cosmetic field (see column 1, lines 59-61 and column 7, lines 65 to column 8, line 10 and examples 9 (make-up) and 13-14 (anti-perspirant). The silicon elastomer of Kilgour is better dispersed in the organic liquid used in the emulsion or the composition (see column 1, lines 52-53). The organic liquid is defined in column 7, lines 15-24, as specifically suitable for a cosmetic emulsion/composition, and is used at ambient temperature. One of ordinary skill in the art would not have combined this disclosure in Kilgour directed to cosmetics to an insulating agent such as liquid silicon rubber as described in Pause, wherein it is necessary to reduce the risk of demixing between an insulating base and polysiloxane so as to obtain thermal insulation having improved insulating quality, and stability over time and a wide temperature range. Regardless of whether it is well known to use a compatiblizing agent to homogenize a mixture of components in a personal care composition, the entirely different constraints found in insulating cables or bicycle seats as in Pause (with, in the case of cables, an amount of composition which surely would satisfy the personal care requirements of a small village) is simply not common sense to one of ordinary skill in the art. In view of the lack of any indication in the widely different fields of Pause for the need of a compatibilizer, this combination of references simply is hindsight. However, it is argued at page 5 of the office action that the properties of a chemical compound depend on the structure thereof, not on the intended use. Indeed, this is true as to the properties of the compound. However, that is not the issue here, where the rejection depends on whether one of ordinary skill in the art would take a material shown to provide an important function in cosmetic compositions, and decide to add that material to a composition employed in insulation, when there is, first, no showing that the added material is needed for the reason it is employed in the secondary reference and, two, no expectation in the art that the property of the material in cosmetic range would be maintained in the wholly different environment of the primary reference. At page 5, the office action argues that, if this logic were true, a reference in the beverage art teaching that ethanol mixes with water for beverages would not be expanded to the use of ethanol to mix with water in a cosmetic composition. Indeed, such an expansion would not be obvious. The fact that a water/alcohol mixture may be pleasant to drink does not provide one of ordinary skill in the art with a reasonable expectation of success if a water-based cosmetic composition is diluted with alcohol, and then applied to the skin. Would the fact that the material mixes result in a composition which maintains pleasant drinkability? A cosmetic composition is not to be ingested. Could the composition be applied to the skin without irritation? We do not know. The point is, the fact that a combination may be advantageous in one environment, does not make that combination advantageous in all environments, particularly different environments. Thus, the use of a compatibilzer in cosmetic composition does not suggest to one of ordinary skill in the art that beneficial properties would be obtained by the use of that

compatibilzer in an insulating composition. In insulating compositions, stability of the gel is an important property of the insulator, and in the present claims is achieved by incorporating a compatibilizing agent which is of the same nature as the insulating liquid base and can be grafted onto the polysiloxanes during cross- linking. See, for example, page 12, line 25 - page 13, line 1 of the present specification: when the insulating liquid base essentially consists of a paraffin or a mixture of paraffins (for example a C~4 to C20 paraffin cut), a compatibilizing agent is generally used to improve the stability of the gel and to avoid paraffin washout. Indeed, in the insulating realm, the amount of the various components in the formulation is of importance, as taught at page 12, lines 3-6 of the specification: the fact that the hydrosilane functions consumed by grafting the compatibilizing agent can no longer take part in cross-linking and node formation is taken into account. The formulation is adapted to provide sufficient hydrosilane functions to ensure grafting of the compatibilizing agent and cross-linking. Thus, it is clear that one of ordinary skill in the art would not combine the compatibilizer of the cosmetic composition of Kilgour with the insulating compositions of Pause, with any reasonable expectation of success in the environment of the primary reference. Withdrawal of this rejection is therefore respectfully requested.

The Examiner respectfully disagrees with this argument. First of all, properties of a chemical compound depend on the structure of the chemical compound not on its intended use. Following the Applicant's logic, even though the reference is found in the beverage art teaching that ethanol mixes well with water for the use of the resulting ethanol/water mixture in beverages, one of ordinary skill in the art should not expect for the ethanol to mix well with water if the mixture is for the use in a cosmetic composition because the reference is directed to a non-analogous beverage art area.

Kilgour et al teaches that a silicone elastomer formed by cross-linking hydrosilylation reaction (in the presence of platinum catalyst – See column 5, lines 14-15) of an alkenyl functional silicone compound, a silylhydride functional silicone compound; and one or more **α, β-*unsaturated alkenes*** exhibits hydrolytic stability, **compatibility** with **organic** media (See column 1, lines 20-55) such as **$C_{10}$-$C_{24}$ alkanes** being liquid at **$20^0$C**-$50^0$C (See column 7, lines 14-17, 37-40), e.g. isododecane (See column 9, lines 47-54). Therefore, one of ordinary skill in the art would have reasonable expectation of success in achieving stable homogeneous mixture while mixing a silicone elastomer (formed by cross-linking hydrosilylation reaction in the presence of platinum catalyst of an alkenyl functional silicone compound, a silylhydride functional silicone compound) with **$C_{10}$-$C_{24}$ alkanes**, e.g. isododecane, in the presence α, β-unsaturated

alkenes, whether the above components were mixed for cosmetic purposes or for pipe protection as long as chemical structures of the components are the same. Thus, in contrast to Applicants argument, Kilgour does remedy the deficiency of Pause.

**Pause, Kilgour and Salyer**

Reconsideration of this rejection is also respectfully requested. The deficiencies of Pause and Kilgour are discussed above. Salyer, cited purely for its disclosure of various phase change materials, provides no remedy to this deficiency. In Salyer, patentees' process involves cross-linking of the matrix, then phase change material is subsequently added, and incorporated into the cross-linked matrix by immersing the matrix into a bath of melted phase change material. Not only does Salyer fail to disclose a process in which the phase change material is added in a polysiloxane resin during the cross-linking step, but Salyer fails to disclose the use of a compatibilizing agent in order to improve the stability of the insulating gel over the time. Accordingly, withdrawal of this rejection is also respectfully requested.

The Examiner respectfully disagrees with this argument. Pause teaches that, in principle, **all** phase change materials with phase transition temperatures in the required temperature ranges, e.g. in the range of $20^0$C-$100^0$C depending on application can be used for incorporation into the silicone rubber matrix (See column 3, line 65 to column 4, line 8). Applicant is correct about Salyer that it is cited purely for its disclosure that claimed phase change materials for the use in a **crosslinked** polymer matrix were known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used crystalline fatty acids of Salyer in Pause instead of crystalline alkyl hydrocarbons since Salyer teaches that crystalline organic compounds such as crystalline alkyl hydrocarbons, crystalline **fatty acids**, crystalline fatty acid esters, crystalline alicyclic hydrocarbons, and crystalline aromatic hydrocarbons are phase change materials suitable for the use in a **crosslinked** polymer matrix, and Pause does not limit its teaching to particular phase change materials. Moreover, it is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07.

**Pause, Kilgour and Hupfield**

Reconsideration of this rejection is also respectfully requested. Hupfield does nothing to remedy the deficiencies of Pause and Kilgour, discussed above. Hupfield is cited solely for its disclosure of anti-bacterial agents used in insulating materials. In fact, Hupfield does not relate to the field of flow lines or pipeline thermal insulation. Hapfield fails to describe a gel formed from an insulating liquid base which is a change material and at least one gelling agent comprising at least one polysiloxane resin, and Hupfield fails to describe that additives are soluble in the liquid base. Accordingly, this rejection should also be withdrawn.

The argument is unconvincing because anti-bacterial properties of the insulating material would not depend on which object the material is placed. The anti-bacterial agents in insulating materials would be effective whether the insulating materials are placed on a cable or on any other object including pipeline.

**Pause, Kilgour and Craubner**

Reconsideration of this rejection is also respectfully requested. Craubner also fails to remedy the deficiencies of Pause and Kilgour and indeed is cited only for its disclosure of biocides. Although Craubner discloses a method for thermally insulated a pipeline consisting in surrounding the pipeline with an insulated material, which material comprises a plurality of contiguous hollow structures whose interstices are filled with a polysiloxane elastomer (line 35- 39 page 2), Craubner fails to describe an isolated gel comprising an insulating liquid base which is a phase change material, a gelling agent comprising at least one polysiloxane resin and a compatibilizing agent. Furthermore, Craubner fails to describe that additives are soluble in the liquid base. As a result, Craubner fails to remedy the deficiencies of the primary and secondary references, and withdrawal of this rejection is also respectfully requested.

The Examiner respectfully disagrees with this argument. Craubner is a secondary reference which is relied upon to show that an insulating composition may contain *biocides* (See column 3, line 8) and *hollow glass microspheres* to provide thermal and flame resistance (See column 2, lines 32-39). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added antibacterial agents and hollow glass microspheres to an insulating composition of Pause ‘773 in view of Kilgour et al ‘170 with the expectation of providing the desired antibacterial properties and thermal and flame resistance, as taught by Craubner. Therefore, it is irrelevant whether Craubner teaches a compatibilizing agent or other limitations of claims which are already taught by Pause and Kilgour, or not.

**Pause combined with Vergouw**

Applicants traverse the rejection because Pause, even in combination with Kilgour (not used in the present rejection) fails to disclose the use of a compatibilizing agent in combination with a insulating composition such as that of the claims. Vergouw does not describe an insulating liquid base which is a phase change material, gelling agent with at least one polysiloxane resin and a compatibilizing agent, but instead discloses a gel based on kerosene having increased viscosity when stirred. As a result, regardless of its teaching of the installation of power cables, this reference even in combination fails to suggest insulation of a pipeline with a combination of ingredients as claimed. Indeed, insulation of power cables may include electric and thermal insulation, and must be achieved by using both protection by a pipeline (for safety) and thermal insulation by the insulation composition. Withdrawal of this rejection is accordingly respectfully requested. The claims of the application are submitted to be in condition for allowance. However, should the Examiner have any questions or comments, she is cordially invited to telephone the undersigned at the number below.

The Examiner respectfully disagrees with this argument. First of all, in contrast to Applicants' assertion, Kilgour was used in the Final rejection: "Claims 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pause '773 **in view of Kilgour et al '170**, as applied above (i.e. as applied in paragraph 5 above of the Final Office Action), further in view of Vergouw (US 4941773) for the reasons of record set forth in paragraph 9 of the Office Action mailed on 2/1/2010."

Second, **Kilgour et al '170** is applied for the teaching of compatibilizing agent not Vergouw.

Third, Vergouw is a secondary reference which is relied upon to show that power cables may be thermally insulated by placing the power cables **into pipeline** which is covered with an insulation composition. Therefore, it is irrelevant whether Vergouw teaches or does not teach other limitations of claims (which are already taught by Pause and Kilgour). Vergouw is applied NOT for teaching of a compatibilizing agent but for teaching claimed pipelines: "Vergouw teaches that power cables may be thermally insulated by placing the power cables into pipeline 4 that together with other pipelines 2 and 3 for e.g. oil or gas are placed into a carrier pipe 1 (claimed external jacket), lowering the carrier pipe to the seabed (See column 3, lines 60-63), filling the space around the lines 2-4 with an insulation composition by varying pressure (See column 4,

lines 39-40), and gelling the composition (See FIGS. 1 and 2; column 2, lines 53-64; column 4, lines 3-12). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have thermally insulated electric cables of the cited prior art by placing them into a carrier pipe together with other pipelines to be insulated, lowering the carrier pipe to the seabed, filling the carrier pipe with an insulation composition by varying pressure, and gelling the composition, as taught by Vergouw."

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1715

October 19, 2010

/Elena Tsoy Lightfoot/